

Trailblazer™ Leased Line Emulator

900 MHz*, 2.4, 4.9, 5.8 and 5.9 GHz Bands



Applications

- Public Safety Lines
- Two-Way Radio Backhaul
- Voter/Comparator Backhaul
- Simulcast Systems
- Wireless Intercom/PA Systems
- Substation Isolation
- Remote Monitoring
- SCADA
- Disaster Communications
- Industrial Facilities

Wireless Leased Lines, Voice and Broadband Data

Trailblazer™ radios provide a dedicated connection and can be configured with up to eight leased lines (4-wire), telephone lines (POTS) and/or broadband data in the 900 MHz*, 2.4, 5.8, 5.9 and 4.9 GHz bands. Trailblazer™ radios use Carlson's exclusive TrueTDM™ fixed latency technology to provide perfect wireline quality service beyond existing phone lines.

Plug and Play Simplicity & Reliability

All components, including digital radio cards, channel bank, power supplies and CPU are fully integrated into the outdoor 3 kg / 8 lbs waterproof enclosure or a standard aluminum rackmount.

Fixed Latency Radio for Perfect Wireline Quality

Carlson Wireless' exclusive TrueTDM™ technology offers low (less than 5 milliseconds) fixed latency signaling that is compatible with all simulcast and voter receiver/comparator systems. TrueTDM™ also eliminates the need for a jitter buffer and/or GPS oscillator equipment, saving money and time.

Flexible Platform

The Trailblazer™ is a state of the art digital microwave radio transporting 2-wire (POTS), 4-wire (E&M) and/or Ethernet data. It offers a direct phone line interface, requires no channel bank and comes with a direct Ethernet data interface. This transparent network interface supports all PSTN services with Carrier Class/wireline quality of service. Optional interfaces also include V.35 and RS232.

Broadband Capability

Provides IP data up to 512 Kbps (full duplex).

Long Range

Distances of up to 50 miles can be achieved with proper antennas. Repeater radios also available to further extend system range.

Private and Secure

Enhanced Encryption Technology™ spread-spectrum CDMA modulation assures complete privacy.

Power Consumption

Trailblazer™ systems draw very low power, typically less than 3 Watts per CPE terminal at 12 volts. Trailblazers accept AC 120/220 or DC voltage from 12V to 24V. Solar power kits are available with up to 7 days of backup power.



CARLSON WIRELESS™
Microwave Broadband and Telephone

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Trailblazer™

Designed and Built for Plug and Play



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SYSTEM SPECIFICATIONS

Product Description	Digital microwave radio with 2-Wire POTS, 4-Wire leased line and/or Broadband Data Interface
Air Interface	Proprietary Time Division Duplexing with Direct Sequence Spread Spectrum CDMA
Overall Data Throughput Rate	Up to 1.024 Mbps
End to End System Latency	Fixed latency, Less than 5 ms
Voice Coding	64 kbps PCM, per ITUG.711, A or Mu-law

RF PERFORMANCE

RF Frequency Range	2.412 to 2.472 GHz, 4.950 to 4.980 GHz, 5.250 to 5.925 GHz, 902 to 928 MHz also available*
RF Channels	20 MHz
Spreading Codes	Direct sequence
Modulation	BPSK or QPSK
Transmitter Output Power	-20 to +20 dBm, auto set for CDMA operation
Receiver Sensitivity (10-6 BER)	-93 dBm
External Antenna Port	Various external antennas <small>*Additional equipment required</small>

FXS SPECIFICATIONS

Line and Balance Impedance	600 Ohms, Loop start
Loop Current	24 mA, fixed
Maximum Loop Length	1200 Ohms including instrument
Ringing Voltage	60-90 VAC rms
Ring Frequency	20 Hz, optional 16-25 Hz
Ringing Load	3 REN
2-Wire Return Loss (ERL)	Greater than 25 dB

FXO SPECIFICATIONS

Line and Balance Impedance	900 Ohms + 2.16 μ F
Maximum Loop Length	1500 ohms or 18 mA
Ring Equivalent Number	0.38
Ring Detect Threshold	24 - 110 Vrms, 17 - 34 Hz
2-Wire Return Loss	Greater than 19 dB
Transmit Level, 4-wire	0 or +6 dBm per channel
Receive Level, 4-wire	-10 to +10 dBm, adjustable per channel

POWER REQUIREMENTS AND CONSUMPTION

Filtered DC Nominal	12 - 24 Volts, Earth ground required
Absolute Minimum-Maximum	10 - 16 Volts
FXS (Subscriber) End, On-Hook	2 Watts (typical)
FXS (Subscriber) End, 2 Lines Off-Hook	2 Watts (additional)
FXO (Office) End, On or Off Hook	2 Watts (typical)
AC Adaptor	Supplied separately, input 100 - 250 VAC, 50 - 60 Hz, Output 13.8V @ 1 amp

BASEBAND AUDIO PERFORMANCE

Signaling	All audio is passed through unrestricted
Modem Support	V.34 supported, V.90 compatible
FAX Support	G3, G4; unrestricted
Line Interface	FXO, FXS, 4-Wire E&M, Ethernet data
Connectors	Screw terminals/RJ45

DATA SPECIFICATIONS

Interface	10BaseT Ethernet
Throughput	Up to 1.024 Mb/s

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature & Humidity	-30° to 60 °C, 0 to 90% non-condensing
Exposure to the Elements <small>(outside enclosure)</small>	NEMA 4X, rain, wind and ice protected
Shock and Vibration	Mil Standard 810 D
Mounting	25.4 - 57.15 mm (1 to 2.25") pipe/pole mount

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